

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: June 21, 2002, 08:20:15 ; Search time 93.48 Seconds
(Without alignments)
92.680 Million cell updates/sec

Title: US-09-351-778A-9

Perfect score: 78

Sequence: 1 MTGSIAPTDYRNTATGL.....ICCLRRHRRAPRYPIIVL 78

Scoring table:

Gapop 60.0 , Gapext 60.0

Searched: 747574 seqs, 111073796 residues

Word size : 0

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :

A.Geneseq_032802:*
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21: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA2000.DAT:*
22: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	78	100.0	78	22	AA61869
2	78	100.0	101	19	AAW78902
3	78	100.0	101	19	AAW75787
4	78	100.0	101	19	AAW61197
5	78	100.0	101	20	AAW98003
6	78	100.0	101	21	AAW84407
7	78	100.0	101	22	AAW47591
8	78	100.0	101	22	AAW50206
9	78	100.0	101	22	AAW18656
10	75	96.2	87	22	AAW61870
11	70	89.7	77	22	AAW61871

12	55	70.5	101	19	AAW59925	Adenovirus death p
13	40	51.3	90	22	AAW61873	Ad2 ADP putative 1
14	38	48.7	95	22	AAW61868	Ad6 encoded adenov
15	33	42.3	84	22	AAW61872	Ad2 ADP mutant d17
16	24	30.8	93	22	AAW61867	Ad5 encoded adenov
17	19	24.4	19	22	AAW61874	Ad2 ADP transmembr
18	19	24.4	42	22	AAW61876	Ad2 ADP cytosolic
19	18	23.1	94	22	AAW61865	Ad1 encoded adenov
20	8	10.3	8	22	AAW61875	Ad2 ADP cytosolic
21	7	9.0	157	21	AAW18744	Zea mays protein f
22	7	9.0	197	20	AAW34853	C. pneumoniae cell
23	7	9.0	197	22	AAW43319	Propionibacterium
24	7	9.0	242	21	AAW04903	Arabidopsis thalia
25	7	9.0	242	21	AAW58416	Arabidopsis thalia
26	7	9.0	273	22	AAW05846	Novel human diago
27	7	9.0	316	21	AAW04902	Arabidopsis thalia
28	7	9.0	316	21	AAW59415	Arabidopsis thalia
29	7	9.0	473	22	AAW26845	Novel human diago
30	7	9.0	482	21	AAW96786	Soybean sucrose no
31	7	9.0	604	22	AAW67946	Drosophila melanog
32	7	9.0	635	22	AAW66261	Drosophila melanog
33	6	7.7	15	22	AAW78731	Human copper/zinc
34	6	7.7	43	22	AAW44015	Peptide #11521 enc
35	6	7.7	43	22	AAW5030	Human brain expres
36	6	7.7	43	22	AAW7745	Human bone marrow
37	6	7.7	43	22	AAW21656	Peptide #8090 enco
38	6	7.7	43	22	AAW37959	Peptide #11996 enc
39	6	7.7	50	22	AAW78805	Deadpan mutant bHL
40	6	7.7	50	22	AAW78832	Deadpan mutant bHL
41	6	7.7	51	22	AAW78806	Deadpan mutant bHL
42	6	7.7	51	22	AAW78831	Deadpan mutant bHL
43	6	7.7	52	22	AAW48951	Propionibacterium
44	6	7.7	52	22	AAW78807	Deadpan mutant bHL
45	6	7.7	52	22	AAW78830	Deadpan mutant bHL

ALIGNMENTS

RESULT 1	
ID	AAW61869 standard; Protein: 78 AA.
XX	
AC	AAW61869:
XX	
DT	08-MAY-2001 (first entry)
XX	
DE	Ad2 ADP mutant d1716.
XX	
KW	Adenovirus death protein; ADP; neoplastic; cell death; cancer therapy;
KW	anti-cancer; gene therapy; cytostatic; Ad2; mutant.
XX	
OS	Mastadenovirus.
XX	
PN	WO200104282-A2.
XX	
PD	18-JAN-2001.
XX	
PF	12-JUL-2000; 2000MO-US18971.
XX	
PR	12-JUL-1999; 9905-0351778.
XX	
PA	(UNSL-) UNIV SAINT LOUIS.
XX	
PI	Wold WSM, Toth K, Doronin K, Tollefson AE;
XX	
DR	WPI: 2001-103079/11.
XX	
PT	Recombinant vector which is replication-competent in a neoplastic cell
PT	and overexpresses an adenovirus death protein, useful in cancer therapy
PT	when used together with replication-defective adenovirus which
PT	expresses an anti-cancer gene -
XX	

PS Example 9; Fig 20; 196pp; English.

CC The invention relates to a recombinant vector (V1) which is replication-
CC competent in a neoplastic cell and which overexpresses an adenovirus
CC death protein (ADP). The vector can be used in a method for promoting
CC death of a neoplastic cell that comprises contacting the neoplastic cell
CC with at least one V1; and a composition comprising V1 and a second
CC recombinant virus which is: (a) replication defective and which
CC expresses an anti-cancer gene product, where V1 complements replication
CC of the second recombinant virus; or (b) replication-competent in a
CC neoplastic cell. V1, together with one or more replication-defective
CC adenovirus which expresses an anti-cancer gene product, are useful in
CC cancer therapy. Overexpression of ADP by V1 results in faster lysis of
CC cells and spread of the virus throughout a cell monolayer than viruses
CC expressing wild-type levels of ADP. The present sequence represents the
CC amino acid sequence of an Ad2 ADP mutant.

SO Sequence 78 AA;

Query Match 100.0%; Score 78; DB 22; Length 78;
Best Local Similarity 100.0%; Pred. No. 8e-73;
Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MTGSTIAPTDYRNTATGTSALNLPQVHAFVNDMSLDMMFSLMFCIIIMLIC 60
DB 1 mtgstitptcdyntatgtsalnlpyghafvndwasldmmfslmfciiimlic 60
OY 61 CLKRRRARPPYRPIIVL 78
DB 61 clkrtrarpplypriplvl 78

RESULT 2

AAW78902
ID AAW78902 standard; Protein: 101 AA.

AAW78902:

21-DEC-1998 (first entry)

Adenovirus death protein.

Carciocembryonic antigen; transcriptional regulatory element;
CEA-TRE; human; promoter; enhancer; vector; cancer; gene therapy;
PCR; primer; adenovirus death protein; ADP.

Mastadenovirus.

MO9839467-A2.

11-SEP-1998.

03-MAR-1998; 98MO-US04133.

02-MAR-1998; 98US-0039763.

03-MAR-1997; 97US-0039763.

(CALY-) CALYDON INC.

Henderson DR, Lamparski HG, Schuur ER;

WPI: 1998-495862/42.

DR N-PSDB; AAV52966.

New adenovirus vectors, particularly for cancer therapy - comprising
PT adenovirus gene under transcriptional control of carcinoembryonic
PT antigen transcriptional regulatory element

PS Disclosure; Page 68; 95pp; English.

CC This is the amino acid sequence of adenovirus death protein (ADP).
CC Claimed replication-competent adenovirus (Ad) vectors comprise an

CC Ad gene under transcriptional control of a CEA-TRE. The vectors can
CC be used to detect and monitor samples for the presence of cells that
CC allow a CEA-TRE to function, and to selectively kill such cells,
CC especially malignant cells. Vectors containing an ADP gene (see
CC AAV52966) may be more potent than vectors lacking the gene, making
CC possible more effective treatment and/or lower dosage requirement.

SO Sequence 101 AA;

Query Match 100.0%; Score 78; DB 19; Length 101;
Best Local Similarity 100.0%; Pred. No. 1e-72;
Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MTGSTIAPTDYRNTATGTSALNLPQVHAFVNDMSLDMMFSLMFCIIIMLIC 60
DB 1 mtgstitptcdyntatgtsalnlpyghafvndwasldmmfslmfciiimlic 60
OY 61 CLKRRRARPPYRPIIVL 78
DB 61 clkrtrarpplypriplvl 78

RESULT 3

AAW75787
ID AAW75787 standard; Protein: 101 AA.

AAW75787:

21-DEC-1998 (first entry)

Adenovirus death protein.

Probasin transcriptional response element; PB-TRE; rat;
KW androgen receptor; adenovirus; vector; prostate cancer;
KW gene therapy; adenovirus death protein; ADP.

Mastadenovirus.

WO9839466-A2.

11-SEP-1998.

03-MAR-1998; 98MO-US04132.

02-MAR-1998; 98US-0033333.

03-MAR-1997; 97US-0039762.

(CALY-) CALYDON INC.

Henderson DR, Lamparski HG, Schuur ER, Yu D;

WPI: 1998-506369/43.

DR N-PSDB; AAV57354.

New adenovirus vectors, particularly for cancer therapy - comprising
PT an adenovirus gene under transcriptional control of a probasin
PT transcriptional regulatory element

PS Disclosure; Page 96; 117pp; English.

CC This is the amino acid sequence of adenovirus death protein (ADP).
CC Claimed replication-competent adenovirus (Ad) vectors comprise an
CC Ad gene under transcriptional control of a probasin transcriptional
CC response element (PB-TRE, see AAV57354). The vector can be used for
CC detecting cells that allow a PB-TRE to function, especially cells
CC expressing an androgen receptor, such as prostate cells. They can
CC be used to confer selective toxicity to such cells. In particular,
CC the vectors can be used for treating cancers such as prostate cancer.
CC Ad vectors containing the ADP gene (see AAV57354) may render the
CC vector more potent, making possible more effective treatment and/or
CC a lower dosage requirement. An Ad vector has been constructed that
CC contains the ADP gene under control of PB-TRE. Cytotoxicity was

CC demonstrated toward LNCaP (prostate carcinoma) cells.

XX Sequence 101 AA;

Query Match 100.0%; Score 78; DB 19; Length 101;
Best Local Similarity 100.0%; Pred. No. 1e-72;
Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MTGSIAPTDTYRNTATGTSALNPOVHAFFVNDWASLDMMFSLMFVCLIMMLIC 60
DB 1 mtgslaptctdyrntatgtsalnpgvhaftvndwasldmmwfsalmtvcclimmlic 60
OY 61 CLKRRRARPPPIRPIIVL 78
DB 61 clkrtrrrarppipyrlpvl 78

RESULT 4

AAW61197 standard; Protein; 101 AA.

AAW61197;

07-DEC-1998 (first entry)

Adenovirus death protein.

Adenovirus death protein; ADP; vector; hepatoma; cancer;

alpha-fetoprotein transcription regulatory element; AFP-TRE;

hepatocellular carcinoma; hepatoma; gene therapy; human.

Mastadenovirus type 2.

W09839465-A2.

11-SEP-1998.

03-MAR-1998; 98MO-US04084.

02-MAR-1998; 98US-0039597.

03-MAR-1997; 97US-0039597.

(CALY-) CALYDON INC.

Henderson DR, Lamparski HG, Little AS, Schuur ER;

WPI: 1998-495861/42.

N-PSDB; AAV47675.

Claim 29; Page 74; 102pp; English.

This is the amino acid of the adenovirus death protein (ADP) of adenovirus type 2. The ADP coding sequence (see AAV47675), with or without the Y leader, can be introduced into an adenoviral genome, e.g. in the E3 or E4 region. Inclusion of such a coding sequence in an adenoviral vector significantly enhances the extent of cytotoxicity, cell killing and virus production. The invention provides replication-competent adenovirus vectors which preferentially replicate in cells that express alpha-fetoprotein (AFP), particularly hepatoma cells. The vectors comprise at least one adenovirus gene, preferably a gene that contributes to cytotoxicity, under the transcriptional control of an AFP transcription regulatory element (see AAV47654-55). The vectors are useful for conferring selective cytotoxicity to AFP-expressing cells, especially cancer cells.

XX Sequence 101 AA;

Query Match 100.0%; Score 78; DB 19; Length 101;
Best Local Similarity 100.0%; Pred. No. 1e-72;
Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MTGSIAPTDTYRNTATGTSALNPOVHAFFVNDWASLDMMFSLMFVCLIMMLIC 60
DB 1 mtgslaptctdyrntatgtsalnpgvhaftvndwasldmmwfsalmtvcclimmlic 60
OY 61 CLKRRRARPPPIRPIIVL 78
DB 61 clkrtrrrarppipyrlpvl 78

RESULT 5

AAW98003 standard; Protein; 101 AA.

AAW98003;

21-JUN-1999 (first entry)

Adenovirus death protein.

Enhancer; glandular kallikrein-1; hck-1, hKk2; human;

prostate cancer; therapy; adenovirus death protein.

Mastadenovirus 2.

W09906576-A1.

11-FEB-1999.

04-AUG-1998; 98MO-US16312.

03-AUG-1998; 98US-0127834.

04-AUG-1997; 97US-0054523.

02-MAR-1998; 98US-0076545.

(CALY-) CALYDON INC.

Henderson DR, Schuur ER, Yu D;

WPI: 1999-153804/13.

N-PSDB; AAX24756.

Disclosure; Page 165-166; 179pp; English.

This protein comprises the adenovirus death protein (ADP) of adenovirus serotype 2. The invention provides novel adenovirus vectors in which at least one adenovirus gene, preferably one that contributes to cytotoxicity, is placed under transcriptional control of a human glandular kallikrein hKk2 enhancer. Such vectors are useful for treatment of cancers such as prostate cancer. The ADP gene may render the adenoviral vector more potent, making possible more effective treatment and/or lower dosage requirement.

XX Sequence 101 AA;

Query Match 100.0%; Score 78; DB 20; Length 101;
Best Local Similarity 100.0%; Pred. No. 1e-72;
Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MTGSIAPTDTYRNTATGTSALNPOVHAFFVNDWASLDMMFSLMFVCLIMMLIC 60
DB 1 mtgslaptctdyrntatgtsalnpgvhaftvndwasldmmwfsalmtvcclimmlic 60

DB 1 mcgstclapttdyrrntatgtltsalnlpqvhafvndwasldmwfslalmfvcclimwlic 60
 QY 61 CLKRRRAPPYRPPIVL 78
 ||||||||||||||||
 DB 61 clkrrrarpplyrpplivl 78
 ||||||||||||||||

RESULT 6
 ID AAY84407 standard; Protein: 101 AA.
 AC AAY84407;
 DT 25-JUL-2000 (first entry)
 XX
 DE Amino acid sequence of an adenoviral death protein.
 XX
 KM adenoviral vector; adenovirus gene; transcriptional control;
 KM transcriptional regulatory element; TRE; adenoviral propagation;
 KM death protein; tumour.
 XX
 OS Mastadenovirus.
 XX
 PN WO200015820-A1.
 XX
 PD 23-MAR-2000.
 XX
 PE 10-SEP-1999; 99WO-US20718.
 PF 10-SEP-1998; 98US-0099791.
 PR 09-SEP-1999; 99US-0099791.
 XX
 PA (CALY-) CALYDON INC.
 XX
 PI Yu D, Henderson DR;
 XX
 DR WPI: 2000-271456/23.
 DR N-PSDB: AAZ99937.
 XX
 PT Adenovirus vectors comprising cell-status specific response elements
 PS useful in gene therapy protocols for the treatment of cancers -
 XX
 PS Disclosure; Fig 9; 79pp; English.
 XX
 CC The present sequence represents an adenoviral death protein, which is
 CC used to construct the vectors of the invention. The specification
 CC describes adenoviral vectors which comprise an adenovirus gene
 CC under transcriptional control of a cell status specific transcriptional
 CC regulatory element (TRE). The TRE is preferably one that is
 CC essential for adenoviral propagation. The adenovirus vectors
 CC may be used for the treatment of a range of tumours such as lung,
 CC stomach, breast, colon and rectum, and uterine and cervix cancers.
 CC
 SO Sequence 101 AA;

Query Match 100.0%; Score 78; DB 21; Length 101;
 Best Local Similarity 100.0%; Pred. No. 1e-72;
 Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNGSTIAPTDDYRRNTATGTLTSALNLPQVHAFVNDWASLDMMWFSLALMFVCLIMWLIC 60
 ||||||||||||||||
 DB 1 mcgstclapttdyrrntatgtltsalnlpqvhafvndwasldmwfslalmfvcclimwlic 60
 ||||||||||||||||

QY 61 CLKRRRAPPYRPPIVL 78
 ||||||||||||||||
 DB 61 clkrrrarpplyrpplivl 78
 ||||||||||||||||

RESULT 7
 ID AAB47591 standard; Protein: 101 AA.
 XX

AC AAB47591;
 XX
 DT 07-JAN-2002 (first entry)
 XX
 DE ADP amino acid sequence.
 XX
 KM Adenovirus: ADP; replication-competent; adenoviral vector; TRE;
 KM transcriptional regulatory element; mutation; deletion; IRES;
 KM promoter; Internal ribosome entry site; cytotoxic; cancer; bladder.
 XX
 OS Adenovirus.
 XX
 PN WO200173093-A2.
 XX
 PD 04-OCT-2001.
 XX
 PE 21-MAR-2001; 2001MO-US09036.
 PF 24-MAR-2000; 2000US-192156P.
 PR
 XX
 PA (CALY-) CALYDON INC.
 XX
 PI Yu D, Li Y, Henderson DR;
 XX
 DR WPI: 2001-639234/73.
 DR N-PSDB: AAB43535.
 XX
 PT Replication-competent adenoviral vector, useful e.g. for killing cancer
 PS cells, contains two genes linked by internal ribosome entry site and
 PS controlled by target-specific regulator -
 XX
 PS Disclosure; Fig 9; 148pp; English.
 XX
 CC This sequence represents adenoviral ADP. The ADP coding sequence may
 CC be used in the replication-competent adenoviral vector (A) of the
 CC invention which contains two genes (G1, G2) that are co-transcribed
 CC as a single mRNA and under control of a heterologous, target cell-
 CC specific transcriptional regulatory element (TRE). G2 has a mutation
 CC in, or deletion of, its endogenous promoter and is controlled from
 CC an internal ribosome entry site (IRES). The ADP coding sequence may
 CC be used as G1 or G2. (A) has greater specificity for a target cell
 CC than a similar vector in which TRE is operably linked to a gene and
 CC which lacks an IRES. (A) are used to modify the genotype of target
 CC cells, optionally in vitro with subsequent return of altered cells to
 CC the host and where G2 is a cytotoxic gene, to confer selective
 CC cytotoxicity to target cells, especially for killing cancer cells.
 CC ADP displays a cytotoxic, particularly cell lysis, function. Also (A)
 CC are used for diagnosis and monitoring, e.g. detection of bladder cancer
 CC cells. The target cell-specific TRE ensures that (A) has better
 CC targeting specificity, with minimal replication in non-target cells, so
 CC a runaway infection is prevented but production of adenoviral proteins
 CC in target cells activates and/or stimulates the immune response against
 CC target cells producing such proteins. The use of an IRES (rather than
 CC two identical control elements) eliminates the risk of homologous
 CC recombination and may provide enough extra space for an additional
 CC (therapeutic) gene.
 CC
 SO Sequence 101 AA;

Query Match 100.0%; Score 78; DB 22; Length 101;
 Best Local Similarity 100.0%; Pred. No. 1e-72;
 Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNGSTIAPTDDYRRNTATGTLTSALNLPQVHAFVNDWASLDMMWFSLALMFVCLIMWLIC 60
 ||||||||||||||||
 DB 1 mcgstclapttdyrrntatgtltsalnlpqvhafvndwasldmwfslalmfvcclimwlic 60
 ||||||||||||||||

QY 61 CLKRRRAPPYRPPIVL 78
 ||||||||||||||||
 DB 61 clkrrrarpplyrpplivl 78
 ||||||||||||||||

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RESULT      8
AAM50206    AAM50206 standard; Protein: 101 AA.
XX
XX
AC          AAM50206;
XX
XX
DT          07-JAN-2002 (first entry)
XX
DE          Adenovirus death protein.
XX
XX
KM          Adenovirus death protein; uroplakin II; vector;
KM          transcriptional regulatory element; TRE; urothelial cell;
KM          bladder cancer; human; gene therapy.
XX
XX
OS          Mastadenovirus 2.
XX
XX
PN          MO200172994-A2.
XX
XX
PD          04-OCT-2001.
XX
XX
PF          21-MAR-2001; 2001MO-US09224.
XX
XX
PR          24-MAR-2000; 2000US-191861P.
XX
XX
PA          (CALY-) CALYDON INC.
XX
XX
PI          Yu D, Zhang H, Henderson DR;
XX
XX
DR          WPI: 2001-639229/73.
XX
XX
N-PSDB: AAI70186.
XX
XX
PT          Human urothelial cell specific uroplakin transcriptional regulatory
PT          sequences, useful for producing adenoviral vectors which can be used to
PT          confer selective cytotoxicity to target cells, especially bladder
PT          cancer cells -
XX
XX
PS          Example 6, Fig 12; 147pp; English.
XX
XX
CC          The present sequence is that of the adenovirus death protein (ADP).
CC          The ADP gene coding region (see AAI70186) was obtained by PCR
CC          amplification and used in the construction of adenoviral vectors in
CC          which ADP expression was under the control of a urothelial
CC          cell-specific transcriptional regulatory element (TRE) derived from
CC          the human uroplakin II gene 5' flanking region (see AAI70144). This
CC          is an example of adenoviral vectors of the invention. Such vectors
CC          comprise a gene, preferably an adenovirus gene, under transcriptional
CC          control of a urothelial cell-specific TRE. They display urothelial
CC          cell-specific cytotoxicity, and are used for the specific, targeted
CC          gene therapy of bladder cancer.
XX
XX
SQ          Sequence      101 AA:

Query Match      100.0%; Score 78; DB 22; Length 101;
Best Local Similarity 100.0%; Pred. No. 1e-72;
Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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XX
XX
DE          Ad2 encoded adenovirus death protein (ADP).
XX
XX
KM          Adenovirus death protein; ADP; neoplastic; cell death; cancer therapy;
KM          anti-cancer; gene therapy; cytostatic; Ad2.
XX
XX
OS          Mastadenovirus.
XX
XX
FH          Key
FH          Peptide
FT          Location/Qualifiers
FT          1..26
FT          /note- "fragment specifically claimed for"
FT          1..40
FT          /note- "putative luminal domain (AAB61873)"
FT          41..59
FT          /note- "transmembrane domain (AAB61874);
FT          fragment specifically claimed for"
FT          63..70
FT          /note- "cytosolic basic proline domain (AAB61875)
FT          fragment specifically claimed for"
FT          60..101
FT          /note- "cytoplasmic-nucleoplasmic domain"
XX
XX
PN          MO200104282-A2.
XX
XX
PD          18-JAN-2001.
XX
XX
PF          12-JUL-2000; 2000MO-US18971.
XX
XX
PR          12-JUL-1999; 99US-0351778.
XX
XX
PA          (UVSL-) UNIV SAINT LOUIS.
XX
XX
PI          Wold WSM, Toch K, Doronin K, Tollefson AE;
XX
XX
DR          WPI: 2001-103079/11.
XX
XX
PT          Recombinant vector which is replication-competent in a neoplastic cell
PT          and overexpresses an adenovirus death protein, useful in cancer therapy
PT          when used together with replication-defective adenovirus which
PT          expresses an anti-cancer gene -
XX
XX
PS          Claim 5; Page 156; 196pp; English.
XX
XX
CC          The invention relates to a recombinant vector (V1) which is replication-
CC          competent in a neoplastic cell and which overexpresses an adenovirus
CC          death protein (ADP). The vector can be used in a method for promoting
CC          death of a neoplastic cell that comprises contacting the neoplastic cell
CC          with at least one V1; and a composition comprising V1 and a second
CC          recombinant virus which is: (a) replication defective and which
CC          expresses an anti-cancer gene product, where V1 complements replication
CC          of the second recombinant virus; or (b) replication-competent in a
CC          neoplastic cell; V1, together with one or more replication-defective
CC          adenovirus which expresses an anti-cancer gene product, are useful in
CC          cancer therapy. Overexpression of ADP by V1 results in faster lysis of
CC          cells and spread of the virus throughout a cell monolayer than viruses
CC          expressing wild-type levels of ADP. The present sequence represents the
CC          amino acid sequence of an ADP encoded by Ad2.
XX
XX
SQ          Sequence      101 AA:

Query Match      100.0%; Score 78; DB 22; Length 101;
Best Local Similarity 100.0%; Pred. No. 1e-72;
Matches 78; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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```

RESULT 10
AAB61870
ID AAB61870 standard; Protein; 87 AA.
AC AAB61870;
XX
XX 08-MAY-2001 (first entry)
XX
XX A02 ADP mutant d1715.
XX
XX Adenovirus death protein; ADP; neoplastic; cell death; cancer therapy;
XX anti-cancer; gene therapy; cytosstatic; A02; mutant.
XX
XX Mastadenovirus.
XX
XX W0200104282-A2.
XX
XX 18-JAN-2001.
XX
XX 12-JUL-2000; 2000MO-US18971.
XX
XX 12-JUL-1999; 99US-0351778.
XX
XX (UYSL-) UNITV SAINT LOUIS.
XX
XX W01D WSM, Toch K, Doronin K, Tolljefson AE;
XX
XX WPI; 2001-103079/11.
XX
XX PT Recombinant vector which is replication-competent in a neoplastic cell
XX and overexpresses an adenovirus death protein, useful in cancer therapy
XX PT when used together with replication-defective adenovirus which
XX PT expresses an anti-cancer gene -
XX
XX Example 9; Fig 20; 196p; English.
XX
XX
XX The invention relates to a recombinant vector (V1) which is replication-
XX competent in a neoplastic cell and which overexpresses an adenovirus
XX death protein (ADP). The vector can be used in a method for promoting
XX death of a neoplastic cell that comprises contacting the neoplastic cell
XX with at least one V1; and a composition comprising V1 and a second
XX recombinant virus which is: (a) replication defective and which
XX expresses an anti-cancer gene product, where V1 complements replication
XX of the second recombinant virus; or (b) replication-competent in a
XX neoplastic cell. V1, together with one or more replication-defective
XX adenovirus which expresses an anti-cancer gene product, are useful in
XX cancer therapy. Overexpression of ADP by V1 results in faster lysis of
XX cells and spread of the virus throughout a cell monolayer than viruses
XX expressing wild-type levels of ADP. The present sequence represents the
XX amino acid sequence of an A02 ADP mutant.
XX
XX Sequence 87 AA;
XX
XX
XX Query Match 96.2%; Score 75; DB 22; Length 87;
XX Best Local Similarity 100.0%; Pred. No. 1,le-69;
XX Matches 75; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 MNGSTLAPPTGYRRTATGTLSTLNLPQVHAFVNDKASLDMMHFSIALMFCILIMLIC 60
XX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
XX Db 1 mgseltleptcyrtcttcgtltsalnlpqvhafrvndwasldmwwfsiallmfcilimlic 60
XX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
XX QY 61 CLKRRRARPPYRPPI 75
XX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
XX Db 61 clkrtrrrpplyrpl 75
XX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
XX
XX RESULT 11
XX AAB61871
XX ID AAB61871 standard; Protein; 77 AA.
XX
XX AAB61871;
XX

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DT	08-MAY-2001	(first entry)
DE	Ad2 ADP mutant d1714.	
KX	Adenovirus death protein; ADP; neoplastic; cell death; cancer therapy;	
KM	anti-cancer; gene therapy; cyostatic; Ad2; mutant.	
OS	Mastadenovirus.	
PN	MO200104282-A2.	
PD	18-JAN-2001.	
PF	12-JUL-2000; 2000MO-US18971.	
PK	12-JUL-1999; 9905-0351778.	
PA	(UYSL-) UNIV SAINT LOUIS.	
PI	Wold MSM, Toth K, Doronin K, Tollefson AE;	
DR	WPI: 2001-103079/11.	
PT	Recombinant vector which is replication-competent in a neoplastic cell	
PT	and overexpresses an adenovirus death protein, useful in cancer therapy	
PT	when used together with replication-defective adenovirus which	
XX	expresses an anti-cancer gene -	
PS	Example 9; Fig 20; 196pp; English.	
XX	The invention relates to a recombinant vector (V1) which is replication-	
CC	competent in a neoplastic cell and which overexpresses an adenovirus	
CC	death protein (ADP). The vector can be used in a method for promoting	
CC	death of a neoplastic cell that comprises contacting the neoplastic cell	
CC	with at least one V1; and a composition comprising V1 and a second	
CC	recombinant virus which is: (a) replication-defective and which	
CC	expresses an anti-cancer gene product, where V1 complements replication	
CC	of the second recombinant virus; or (b) replication-competent in a	
CC	neoplastic cell, V1, together with one or more replication-defective	
CC	adenovirus which expresses an anti-cancer gene product, are useful in	
CC	cancer therapy. Overexpression of ADP by V1 results in faster lysis of	
CC	cells and spread of the virus throughout a cell monolayer than viruses	
CC	expressing wild-type levels of ADP. The present sequence represents the	
XX	amino acid sequence of an Ad2 ADP mutant.	
SO	Sequence 77 AA;	
Query Match	89.7%; Score 70; DB 22; Length 77;	
Best Local Similarity	100.0%; Pred. No. 1,4e-64;	
Matches 70; Conservative 0; Mismatches 0; Indels 0; Gaps 0;		
OY	1 MGTGSIATPTTGYRRATGATGATGALNIPGVHAFVNDMA5LDMDMFSA1LMPVCLIRMLIC 60	
Db	1 MGTGSIATPTTGYRRATGATGATGALNIPGVHAFVNDMA5LDMDMFSA1LMPVCLIRMLIC 60	
OY	61 CLKRRRRARP 70	
Db	61 CLKRRRRARP 70	
RESULT 12		
AAW59925	AAW59925 standard; Protein; 101 AA.	
AAW59925;		
11-JAN-1999	(first entry)	
Adenovirus death protein.		
Adenovirus death protein; ADP; transcription regulatory element;		

KM vector; breast cancer; prostate cancer; liver cancer; colon cancer;
 KW gene therapy.
 XX Mastadenovirus.
 OS WO9839464-A2.
 XX
 PN
 XX
 PD 11-SEP-1998.
 XX
 PF 03-MAR-1998; 98MO-US04080.
 XX
 PR 02-MAR-1998; 98US-0054523.
 PR 03-MAR-1997; 97US-0039762.
 PR 03-MAR-1997; 97US-0039763.
 PR 04-AUG-1997; 97US-0054523.
 XX
 XX (CALY-) CALYDON INC.
 XX
 PI Henderson DR, Lamparski HG, Yu D;
 XX
 DR WPI: 1998-495860/42.
 DR N-PSDB; AAV53632.
 XX
 PT New adenovirus vectors, used for treating tumors - comprising first
 PT and second adenovirus genes under control of different heterologous
 PT transcriptional regulatory elements
 PS
 PS Disclosure; Page 94; 130pp; English.
 XX
 CC This is the amino acid sequence of adenovirus death protein (ADP).
 CC The invention provides replication-competent adenovirus vectors
 CC specific for target cells and methods of using such vectors. The
 CC vectors contain heterologous transcription regulatory elements
 CC (TREs) and may incorporate a gene, such as the ADP gene (see
 CC AAV53632), which can contribute to cytotoxicity in the target cell.
 CC Adenoviral replication can be restricted to target cells in which
 CC the heterologous TREs are functional and thus the vectors can
 CC provide selective cytotoxicity to the target cells (e.g. prostate,
 CC liver, breast or colon), particularly neoplastic cells.
 CC
 XX
 SQ Sequence 101 AA;

Query Match 70.5%; Score 55; DB 19; Length 101;
 Best Local Similarity 100.0%; Pred. No. 5e-49;
 Matches 55; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 24 LNLQVHAFFVNDASLDMMFSLAFVCLITMMLICLKRARRAPPIYPIVL 78
 ||||||||||||||||||||||||||||||||||||||||||||||||
 DB 24 Lnlpqvhafrvdasldmwfslafvcllmfcllmvllclckrrrrrrpplyrplvl 78

RESULT 13
 AAB61873
 ID AAB61873 standard; Protein; 40 AA.
 XX
 AC AAB61873;
 XX
 DT 08-MAY-2001 (first entry)
 XX
 DE Ad2 ADP putative luminal domain.
 XX
 KW Adenovirus death protein; ADP; neoplastic; cell death; cancer therapy;
 KW anti-cancer; gene therapy; cytostatic; Ad2.
 XX
 OS Mastadenovirus.
 OS
 PN WO200104282-A2.
 XX
 PD 18-JAN-2001.
 XX
 PF 12-JUL-2000; 2000MO-US18971.
 XX

PR 12-JUL-1999; 99US-0351778.
 XX
 PA (UWSL-) UNIV SAINT LOUIS.
 XX
 PI Wold MSM, Toch K, Doronin K, Tollefson AE;
 XX
 DR WPI: 2001-103079/11.
 XX
 XX
 PT Recombinant vector which is replication-competent in a neoplastic cell
 PT and overexpresses an adenovirus death protein, useful in cancer therapy
 PT when used together with replication-defective adenovirus which
 PT expresses an anti-cancer gene -
 PS
 PS Example 9; Fig 20; 196pp; English.
 XX
 CC The invention relates to a recombinant vector (V1) which is replication-
 CC competent in a neoplastic cell and which overexpresses an adenovirus
 CC death protein (ADP). The vector can be used in a method for promoting
 CC death of a neoplastic cell that comprises contacting the neoplastic cell
 CC with at least one V1; and a composition comprising V1 and a second
 CC recombinant virus which is: (a) replication defective and which
 CC expresses an anti-cancer gene product, where V1 complements replication
 CC of the second recombinant virus; or (b) replication-competent in a
 CC neoplastic cell, V1, together with one or more replication-defective
 CC adenovirus which expresses an anti-cancer gene product, are useful in
 CC cancer therapy. Overexpression of ADP by V1 results in faster lysis of
 CC cells and spread of the virus throughout a cell monolayer than viruses
 CC expressing wild-type levels of ADP. The present sequence represents the
 CC amino acid sequence of an Ad2 ADP putative luminal domain.
 CC
 XX
 SQ Sequence 40 AA;

Query Match 51.3%; Score 40; DB 22; Length 40;
 Best Local Similarity 100.0%; Pred. No. 6.6e-34;
 Matches 40; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MTGSTIAPFTYDRTATGTLTSLNLPQVHAFFVNDASLD 40
 ||||||||||||||||||||||||||||||||||||||||||||
 DB 1 mtgstiapftdyrntatgtltsalnlpvhafrvdasld 40

RESULT 14
 AAB61868
 ID AAB61868 standard; Protein; 95 AA.
 XX
 AC AAB61868;
 XX
 DT 08-MAY-2001 (first entry)
 XX
 DE Ad6 encoded adenovirus death protein (ADP).
 XX
 KW Adenovirus death protein; ADP; neoplastic; cell death; cancer therapy;
 KW anti-cancer; gene therapy; cytostatic; Ad6.
 XX
 OS Mastadenovirus.
 OS
 PN
 XX
 FT Key Location/Qualifiers
 FT Peptide 1..26 /note- "fragment specifically claimed for"
 FT Peptide 41..59 /note- "fragment specifically claimed for"
 FT Peptide 63..70 /note- "fragment specifically claimed for"
 FT
 XX
 PN WO200104282-A2.
 XX
 PD 18-JAN-2001.
 XX
 PF 12-JUL-2000; 2000MO-US18971.
 XX
 PF 12-JUL-1999; 99US-0351778.
 XX

PA (UYSL-) UNIV SAINT LOUIS.
 XX
 PI Wold MSM, Toch K, Doronin K, Tollefson AE;
 XX
 DR WPI: 2001-103079/11.
 XX
 PT Recombinant vector which is replication-competent in a neoplastic cell
 PT and overexpresses an adenovirus death protein, useful in cancer therapy
 PT when used together with replication-defective adenovirus which
 PT expresses an anti-cancer gene -
 XX
 PS Claim 5; Page 157; 196pp; English.
 XX
 CC The invention relates to a recombinant vector (V1) which is replication-
 CC competent in a neoplastic cell and which overexpresses an adenovirus
 CC death protein (ADP). The vector can be used in a method for promoting
 CC death of a neoplastic cell that comprises contacting the neoplastic cell
 CC with at least one V1; and a composition comprising V1 and a second
 CC recombinant virus which is: (a) replication defective and which
 CC expresses an anti-cancer gene product, where V1 complements replication
 CC of the second recombinant virus; or (b) replication-competent in a
 CC neoplastic cell. V1, together with one or more replication-defective
 CC adenovirus which expresses an anti-cancer gene product, are useful in
 CC cancer therapy. Overexpression of ADP by V1 results in faster lysis of
 CC cells and spread of the virus throughout a cell monolayer than viruses
 CC expressing wild-type levels of ADP. The present sequence represents the
 CC amino acid sequence of an ADP encoded by Ad5.
 XX
 SO Sequence 95 AA:
 .
 Query Match 48.7%; Score 38; DB 22; Length 95;
 Best Local Similarity 100.0%; Pred. No. 1.6e-31;
 Matches 38; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 41 MWFSLAFVCLIMVLCICLRARRAPPYRPIIVL 78
 ||||||||||||||||||||||||||||||||
 DB 35 mwfslafvclimvliclckrrrapplyrpiivl 72
 RESULT 15
 AAB61872
 ID AAB61872 standard; Protein; 84 AA.
 XX
 AC AAB61872;
 XX
 DT 08-MAY-2001 (first entry)
 XX
 DE Ad2 ADP mutant dl737.
 XX
 KM Adenovirus death protein; ADP; neoplastic; cell death; cancer therapy;
 KM anti-cancer; gene therapy; cytostatic; Ad2; mutant.
 XX
 OS Mastadenovirus.
 XX
 PN WO200104282-A2.
 XX
 PD 18-JAN-2001.
 XX
 PF 12-JUL-2000; 2000WO-US18971.
 XX
 PR 12-JUL-1999; 99US-0351778.
 XX
 PA (UYSL-) UNIV SAINT LOUIS.
 XX
 PI Wold MSM, Toch K, Doronin K, Tollefson AE;
 XX
 DR WPI: 2001-103079/11.
 XX
 PT Recombinant vector which is replication-competent in a neoplastic cell
 PT and overexpresses an adenovirus death protein, useful in cancer therapy
 PT when used together with replication-defective adenovirus which
 PT expresses an anti-cancer gene -

XX
 PS Example 9; Fig 20; 196pp; English.
 XX
 CC The invention relates to a recombinant vector (V1) which is replication-
 CC competent in a neoplastic cell and which overexpresses an adenovirus
 CC death protein (ADP). The vector can be used in a method for promoting
 CC death of a neoplastic cell that comprises contacting the neoplastic cell
 CC with at least one V1; and a composition comprising V1 and a second
 CC recombinant virus which is: (a) replication defective and which
 CC expresses an anti-cancer gene product, where V1 complements replication
 CC of the second recombinant virus; or (b) replication-competent in a
 CC neoplastic cell. V1, together with one or more replication-defective
 CC adenovirus which expresses an anti-cancer gene product, are useful in
 CC cancer therapy. Overexpression of ADP by V1 results in faster lysis of
 CC cells and spread of the virus throughout a cell monolayer than viruses
 CC expressing wild-type levels of ADP. The present sequence represents the
 CC amino acid sequence of an Ad2 ADP mutant.
 XX
 SO Sequence 84 AA:
 .
 Query Match 42.3%; Score 33; DB 22; Length 84;
 Best Local Similarity 100.0%; Pred. No. 2e-26;
 Matches 33; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 46 IALMFVCLIMVLCICLRARRAPPYRPIIVL 78
 ||||||||||||||||||||||||||||||||
 DB 29 ialmfvclimvliclckrrrapplyrpiivl 61
 Search completed: June 21, 2002, 08:23:31
 Job time: 196 sec

